This Assignment deals with money, the Federal Reserve System, and the effects of money growth on the rate of inflation. In this Assignment, assume you are hired as an assistant quantitative analyst at a bank and one of your duties is calculating reserves and loans based on the total deposits in the bank.

Given the scenarios provided below, complete the tables and explain the computation results. This Assignment requires a combination of short paragraph answers, computations, and completion of a 450-500 word essay.

1. This section deals with increase in money supply given two scenarios (see “a” and “b” below). In Westlandia, the public holds 50% of money one (M1) in the form of currency, and the required reserve ratio is 20%.
   1. Estimate how much the money supply will increase in response to a new cash deposit of $500 by completing the accompanying table and calculate the new total money supply.

(**Hint:** The first row shows that the bank must hold $100 in minimum reserves — 20% of the $500 deposit — against this deposit, leaving $400 in excess reserves that can be loaned out. However, since the public wants to hold 50% of the loan in currency, only $400 × 0.5 = $200 of the loan will be deposited in round 2 from the loan granted in Round 1.)

| Round | Deposits | Required reserves | Excess reserves | Loans | Loan proceeds held as currency | Loan proceeds deposited |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | $500.00 | $100.00 | $400.00 | $400.00 | $200.00 | $200.00 |
| 2 | $200.00 |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |
| Totals |  |  |  |  |  |  |

* 1. Estimate how much the money supply will increase in response to a new cash deposit of $500 by completing the accompanying table and calculate the new total money supply. How does your answer compare to an economy in which the total amount of the loan is deposited in the banking system and the public does not hold any of the loans in currency? (**Hint:** Complete the table below when none of the loan proceeds are held in currency following the example for row 1.)

| Round | Deposits | Required reserves | Excess reserves | Loans | Loan proceeds held as currency | Loan proceeds deposited |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | $500.00 | $100.00 | $400.00 | $400.00 | 0.00 | $400.00 |
| 2 | $400.00 |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |
| Totals |  |  |  |  |  |  |

* 1. Calculate the Money Multiplier for question 1. a.) based on its computed change in money supply, and calculate the Money Multiplier for question 1. b.) based on its computed change in money supply. What does this imply about the relationship between the public’s desire for holding currency and the money multiplier? Which scenario will contribute more to increase in money supply?

1. Explain how each of the following situations changes quantity of money (money supply) in the economy, based on its computed change in money supply.

a) The Federal Reserve System buys bonds

b) The Federal Reserve System auctions credit

c) The Federal Reserve System raises the discount rate

d) The Federal Reserve System raises the reserve requirement

1. Assume that in a country the total holdings of banks were as follows:

| Bank | Amount in million dollars |
| --- | --- |
| Required Reserve | $45 |
| Excess Reserve | $15 |
| Deposits | $750 |
| Loans | $600 |
| Treasury Bonds | $90 |

1. Show that the balance sheet balances if these are the only assets and liabilities.
2. Assuming that people hold no currency, what happens to each of these values if the central bank changes the reserve requirement ratio to 2%, banks still want to hold the same percentage of excess reserves, and banks do not change their holdings of Treasury bonds?
3. How much does the money supply change by?
4. Complete the following in 450-500 word essay. As an assistant quantitative analyst for this bank, what can you assume from these results? What recommendations can you provide to your senior manager on loan rates, depending on the Federal Reserve System's ratio percentage? What should the bank do when the Fed raises the discount rate and the Federal Funds Rate? What should the bank do when the Fed increases and decreases the reserve ratio to change the reserve requirement?